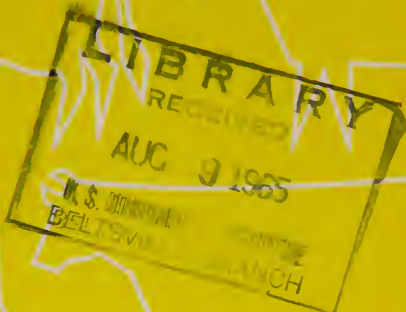


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# LUMPY SKIN

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A Highly Infectious Foreign Disease of Cattle

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PA NO. 636  
U.S. DEPARTMENT OF AGRICULTURE

# LUMPY SKIN

a highly infectious foreign  
disease of cattle

Lumpy skin is a highly infectious disease of cattle that is characterized by the spectacular appearance of lumps, or nodules, in the skin on all parts of the body.

The death rate from lumpy skin generally is low. Economic losses often are high, however, because infected cattle lose weight and condition rapidly. In cows with lumpy skin, milk production decreases or stops completely.

This foreign cattle disease does not affect man or other species of animals. It has never occurred in the United States.



Guernsey with lumpy skin. Note the wide distribution and the varying size of lumps.

## WHERE LUMPY SKIN OCCURS

Lumpy skin occurs only in Africa. It is established in many of the countries south of the Equator, particularly the Republic of South Africa, South West Africa, Rhodesia, Zambia, Malawi, and Mozambique.

This disease definitely is on the move northward. In the early 1960's, outbreaks were reported in Kenya, Rwanda, Burundi, the Congo, Malagasy Republic, and Nigeria.

## CAUSE

There are at least three separate strains of the virus of lumpy skin. The major outbreaks in Africa have been caused by a strain known as the Neethling type. This strain causes the most severe form of infection, which is generally considered to be true lumpy skin. The Allerton strain of virus usually produces a mild form of disease. A third strain apparently produces no disease.

Cattle may harbor the virus in their circulatory systems for 22 days after signs of the disease develop. Hardened, persisting lumps contain virus as long as 120 days after their formation.

Laboratory and field trial evidence indicates that strains of lumpy skin virus are related to certain strains of sheep pox virus. (Sheep pox—another dangerous foreign animal disease—has never been diagnosed in the United States.)

## SPREAD

Lumpy skin spreads in an irregular pattern. It may pass over cattle close to the original outbreak and appear in a herd several miles away.

There are great variations in infection rates between herds. Five to 50 percent of the cattle in naturally exposed herds normally show signs of the disease; 40 to 50 percent of the cattle inoculated with lumpy skin virus in experiments develop the disease. Infection rates occasionally rise above 50 percent in new outbreaks.



Lumps on neck.

Scientists are not certain how lumpy skin is spread. Circumstantial evidence indicates that mosquitoes are involved, because major outbreaks generally are associated with large mosquito popu-



lations. However, cases of lumpy skin have occurred when there was little mosquito activity. This explains why some research and disease-control workers believe that lumpy skin is spread by direct contact between infected and uninfected cattle. An example is the possible spread of lumpy skin to calves through the milk of an infected dam.

## SIGNS OF LUMPY SKIN

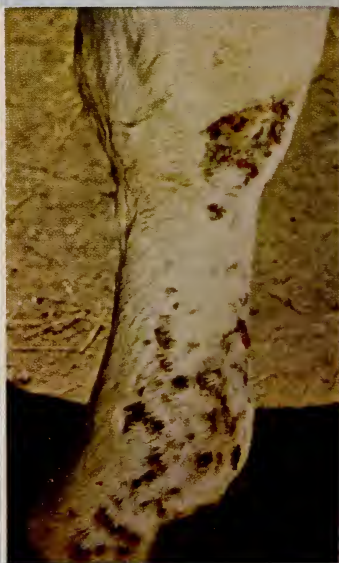
Lumpy skin is one of the most spectacular of all cattle diseases.

Characteristic lumps, or nodules, appear suddenly 2 to 4 weeks after susceptible cattle are exposed. These lumps, which give the disease its name, vary from somewhat smaller than a dime to about the size of a silver dollar. They are firm, well-defined, raised areas that usually have a flattened surface.

Lumps may spread over the entire surface of the body and may extend into the respiratory and genital tracts. Frequently, the center of the lump dies,



Muzzle lesions (left)—small, round, opaque areas that often develop into larger erosions or ulcers. Lesions also occur in the nostrils and mouth.



Swollen fetlock. Swelling usually affects front legs; it may spread to brisket and lower neck. Right: Lesions of mild form of lumpy skin. Some swelling may remain for a long period.



Hardened lump, ready to slough off. A secondary infection (shown here) frequently develops in underlying tissues.

becomes dry, and then falls out, leaving an ulcer. Lumps may disappear without treatment within a few days or become hard and persist for more than a year.

After lumps appear, swellings often develop as a result of fluid accumulation in the tissues. These swellings or edemas usually are found in the front legs, brisket, lower neck, udder, or lymph nodes.

Other signs of lumpy skin are a rough hair coat and a staff gait. Occasionally, affected cattle have discharges from the eyes, nose, and mouth.

In native African cattle, death losses generally are low. In European breeds, 10 percent or more of the infected cattle may die.

Most deaths in cattle with lumpy skin are a result of secondary infections. When lumps become infected, large areas of dead tissue and skin slough away. The animal loses condition quickly. In fatal cases, cattle usually die about 10 days after lumps first appear. Some cattle with large, raw, open sores remain alive beyond this period; usually it is advisable to kill them for humane reasons.

## SIMILAR CONDITIONS

A number of abnormal skin conditions and cattle diseases produce lesions similar to those of lumpy skin. The following conditions that occur in the United States might be confused with lumpy skin:

- Allergic reactions, or urticaria. This group of skin conditions includes nettle rash and hives.
- Photosensitization, or acute sensitivity to sunlight.
- Warbles, caused by cattle grubs.
- Tick or insect bites.

- Demodectic mange, caused by a mite that lives in the hair follicles of the skin.
- Hyperkeratosis, caused by an industrial wax. The affected animal's skin becomes thick, wrinkled, and hornlike; secondary infections often develop. This originally was known as X-disease. It is now rare in the United States.

In Africa, diagnosis of lumpy skin may be confused because of swellings caused by internal parasites, protozoa that live in the skin, or fungus. The parasites that cause these African diseases do not occur in the United States.



**Lumps on teats and udder, often accompanied by severe mastitis.**

**Right: Tail raised to show chains of lumps below tailhead.**

## DIAGNOSIS

Tentative diagnosis of lumpy skin is based on a careful examination of suspect cattle by a veterinarian. In addition to looking at signs and lesions, he will need to know the history of the cattle herd, how many new animals have been added and their points of origin, any unusual buildups of mosquitoes or other insects, and similar information about abnormal local conditions.

The diagnosis must be confirmed by laboratory tests.



## HOW THE UNITED STATES GUARDS AGAINST IT

Many precautions are taken by the U.S. Department of Agriculture to prevent the introduction of foreign animal diseases—including lumpy skin—into this country.

Our laws prohibit the importation of cattle from countries with either foot-and-mouth disease or rinderpest. The USDA has declared that these highly contagious cattle diseases occur throughout the continent of Africa. Therefore, the United States prohibits imports of all cattle from Africa. This action automatically bars cattle from the countries in which lumpy skin is known to occur.

As a further protection, the United States requires that every imported animal have an official veterinary certificate of health from its native country. Imported cattle are inspected at U.S. ports of entry, where they are further tested, treated, and quarantined, as necessary.

Other measures—such as spraying airplanes with insecticides when they arrive in this country from certain areas—are aimed at preventing the introduction of mosquitoes and other insects that might spread the disease.

## CONTROL

In most affected countries, control of lumpy skin has been only partially successful. Wide-scale eradication has not been attempted in areas in which the disease is entrenched, but control programs have been able to limit outbreaks and restrict the spread of the disease. The following disease-fighting measures have been used against lumpy skin:

- Slaughter of cattle that have active cases.
- Quarantines.
- Restrictions on the movement of all livestock in the affected area.
- Intensive insect control, including widespread use of insecticides.
- Regular vaccination of cattle in the affected area.

If lumpy skin were to occur in the United States, a joint eradication program would be launched immediately by the States and the U.S. Department of Agriculture. The cooperative program would be similar to those for eradicating other foreign animal diseases, and would include many of the measures listed above.

## WHAT YOU CAN DO

If you find lumps characteristic of lumpy skin in your cattle, notify your veterinarian, a State or Federal animal-disease-control official, or your county agricultural agent at once.

Give the officials all the information you can about your herd, possible sources of infection, mosquitoes and other insects in your area, and unusual or abnormal conditions.

Isolate affected cattle.

Do not move any animals off your farm or ranch until disease-control officials inform you that such movements are safe.

Control mosquitoes and other insects.

Cooperate with your neighbors and with disease-control officials in eradication.

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*This is one of a series of publications designed to acquaint American livestock men with foreign animal diseases and the steps to take if an outbreak is suspected.*

*If you want more information about foreign animal diseases, contact your local veterinarian, your county agent, or State or Federal animal-disease-control officials.*

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Prepared by Animal Disease Eradication Division, Animal Disease and Parasite Research Division, and Animal Inspection and Quarantine Division, Agricultural Research Service; and Regional Analysis Division, Economic Research Service

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